

March 15, 2013

Members of the Public Health Committee of the Connecticut General Assembly

Re: **S.B. No. 872 AN ACT CONCERNING THE USE OF INDOOR TANNING DEVICES
BY PERSONS UNDER EIGHTEEN YEARS OF AGE.**

Dear Senator Gerratana, Representative Johnson, and members of the Public Health Committee:

I am a tenured Professor of Epidemiology at the Yale School of Public Health who conducts research on the causes of human cancer and how we can use that information for cancer prevention. I have 25 years of research experience in Connecticut, including teaching epidemiologic methods at the Yale School of Public Health. I have served on the Board of Scientific Counselors for the U.S. National Cancer Institute. I am also a current member of the Food and Nutrition Board, part of the National Academy of Sciences, which is relevant to this legislation because I was one of the members of the expert panel that most recently established Recommended Dietary Allowances for Vitamin D. **Two of my notable areas of scientific expertise include indoor tanning and skin cancer risk, and health effects of vitamin D.** Thus, I am uniquely qualified to evaluate the science on indoor tanning and skin cancer risk as well as false claims by the tanning industry regarding health benefits of indoor tanning supposedly mediated through vitamin D.

Beginning with risk, **there is no doubt in my mind that indoor tanning causes both melanoma and non-melanoma skin cancers.** The tanning industry has disputed this over the years; they now seem to be moving away from this argument because the research is so convincing. In an attempt to mislead, they had frequently pointed to studies that supposedly did not support indoor tanning as a risk factor for skin cancer. Those are studies of much older aged individuals, who do not engage in indoor tanning often, if ever; therefore, of course indoor tanning is not a primary cause of skin cancer in those populations. However, studies of younger populations, including some of our own work in Connecticut, is clear on linking indoor tanning with elevated skin cancer risk. In our study of almost 800 people from Connecticut, half of whom had non-melanoma skin cancer before the age of 40 and were compared to similar aged people without skin cancer, **EVER** indoor tanning was associated with a 69% increase in risk.¹ In females from Connecticut, the effect was more marked, as would be expected because females tan much more frequently than do males in Connecticut. In our study, more than 80% of the females who had skin cancer under the age of 40 reported indoor tanning. Note also that one-third of the subjects in our study had already had **MORE THAN ONE** skin cancer before age 40, which we were able to confirm with pathology reports.

The tanning industry often claims that burns account for the risk; that is simply not true. In our study, risk was increased in indoor tanners who never reported getting burned. The industry also claims that it is home tanning rather than commercial tanning that is driving the observed risk. That is also untrue; in our study nearly all of the indoor tanning occurred in commercial facilities. The tanning industry will tell you that when you remove people with the fairest skin from studies such as ours, there is no risk. That is also untrue. The tanning industry will say that research fails to consider that people who

indoor tan also get UV exposure from natural sunlight. This assertion is incorrect; we do take that into careful consideration, by querying research participants about their exposure to UV from all sources across the lifetime through a lengthy series of questions, and taking that information into account when arriving at our estimates on the health effects of indoor tanning. Thus, these statements are simply meant to mislead, which is not surprising given the source. **While the industry continues to promulgate falsehoods, credible scientific organizations have reviewed all the data and classified indoor tanning devices as carcinogenic.**

The indoor tanning industry has long claimed health benefits from vitamin D, despite the fact that the Federal Trade Commission has prohibited them from making such statements. It is often said by the industry and tanning proponents that indoor tanning can help tanners reduce their risk of important cancers such as breast, prostate, and colon cancers. One such campaign is called "D-feat cancer," which has been promoted by the Vitamin D Council in partnership with the indoor tanning industry. A 2011 article describes how the D-Feat Breast Cancer Campaign recruits salons to help promote the message that vitamin D helps prevent breast cancer (also describing how profits made can be channeled back to fight anti-sun campaigns).² However, the link between higher vitamin D status and reduced risk of any cancers, including breast cancer, is inconsistent and far from proven, as concluded by the National Academy of Sciences³ and as summarized in the New England Journal of Medicine.⁴ **The indoor tanning industry thus greatly misleads the public about the science on vitamin D and cancer prevention.** Furthermore, the indoor tanning industry has contributed to widespread misinformation about an epidemic of vitamin D deficiency; e.g., the article describing the D-Feat cancer campaign claims that "anti-UV propaganda" campaigns are largely responsible for the widespread vitamin D deficiency epidemic from which much of the world now suffers, and one that has resulted in all sorts of related disease epidemics. This is scientifically incorrect and misleading. To give you but a sense of the real data, the largest clinical study of vitamin D supplementation (the U.S. Women's Health Initiative) not only found no benefit to vitamin D supplementation for cancer prevention, but reported that women who were meeting recommended intakes of vitamin D (600 IU/d) and who received an additional supplement of 400 IU/d actually had a 34% statistically significant INCREASE in the risk of breast cancer.⁵

The best available data on the status of the U.S. population with regard to vitamin D come from the U.S. National Center for Health Statistics.⁶ **As can be readily seen from the most recent national data available, only 3% of whites are considered at risk of vitamin D deficiency** (Figure 4 from that publication). In fact, the populations who are at greatest risk of vitamin D deficiency are populations with deeply pigmented skin, because their skin makes less vitamin D in response to ultraviolet light. Of course, those are not the populations using indoor tanning, so any presentation of statistics on vitamin D that include the entire U.S. population are simply not applicable to the population using tanning salons and are designed to mislead.

I chose public health as a profession because I wanted to help people lead healthier lives. I have no conflicts of interest of any type; my research funding all comes from the National Institutes of Health. I avoid consulting, so that I can retain my objectivity in scientific decision-making. Twice in my career my research has been attacked by industry. The first time involved our group's research on environmental tobacco smoke and lung cancer risk, which was heavily challenged by the tobacco industry (they no longer challenge that science). Now, it is the indoor tanning industry. The tactics

employed by these two industries are strikingly similar, as has been documented by others (e.g., mitigating health concerns, appealing to a sense of social acceptance, emphasizing psychotropic effects, and targeting specific population segments).⁷ Our research on environmental tobacco smoke contributed to policy, controversial at the time, to restrict smoking in public places. Now it seems so obvious. Recognizing the carcinogenic nature of tobacco, we now protect minors from tobacco, as much as we are able through legislation and policy. We must do the same with indoor tanning. It is equally obvious that it is the right thing to do. **It is urgent for Connecticut to join other states and many other countries in protecting vulnerable minors from this completely unnecessary exposure.** Their health depends upon it. Thank you for your consideration.

Sincerely,

Susan T. Mayne, Ph.D.

¹ Ferrucci, L. M., Cartmel, B., Molinaro, A. M., Leffell, D. J., Bale, A. E., and Mayne, S. T. Indoor tanning and risk of early-onset basal cell carcinoma. *J. Am. Acad. Dermatol.* 2012 Oct;67(4):552-62. doi: 10.1016/j.jaad.2011.11.940. Epub 2011 Dec 9.

² http://www.naturalnews.com/032001_D-Feat_Breast_Cancer_campaign.html, accessed 3/13/13

³ Institute of Medicine. Dietary Reference Intakes for calcium and Vitamin D. Washington, D.C.: National Academies Press. 2010.

⁴ Manson, J. E., Mayne, S. T., Clinton, S. K. Vitamin D and prevention of cancer: Ready for prime time? *N. Engl. J. Med.* 364:1385-7, 2011[Epub ahead of print] doi: 10.1056/NEJMp1102022

⁵ Chlebowski, R. T., K. C. Johnson, et al. (2008). "Calcium plus vitamin D supplementation and the risk of breast cancer." *J Natl Cancer Inst* **100**(22): 1581-1591.

⁶ <http://www.cdc.gov/nchs/data/databriefs/db59.pdf>, Figure 4

⁷ Greenman, J., Jones, DA. Comparison of advertising strategies between the indoor tanning and tobacco industries. *J Am Acad Dermatol.* 2010 Apr;62(4):685.e1-18. doi: 10.1016/j.jaad.2009.02.045.